Getting started

ECHO has been replaced by the **Common Metadata Repository (CMR)**, a high-performance, high-quality, continuously evolving metadata system that catalogs all data and service metadata records for the EOSDIS system and will be the authoritative management system for all EOSDIS metadata.

The information contained within this ECHO wiki is now archived for historical reference. Please navigate to the **CMR wiki pages**, or to the **CMR Overview page** on **Earthdata**.

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Introduction

As an ECHO Data Partner, the ECHO operations staff will be your primary contact. There are also a number of online resources at your disposal to assist you as well. The ECHO Home page, located at https://earthdata.nasa.gov/echo, is a very good start.
Before ingest of a new provider's metadata takes place, ECHO will need to have an understanding of expected metadata volume, characteristics, delivery mechanism, frequency, relationship to the study of Earth science, as well as contact information and accessibility of the new provider. This information prepares ECHO with the information needed to provide any needed services and hardware support to the new provider.

ECHO Environments

ECHO Operations supports three environments for utilization by providers. A short description is given below.

1. **Operations** – The Operational system is the high performance, volume, and availability environment utilized by the external science community. This system is monitored and supported 24/7. New ECHO versions are released monthly.
2. **Partner Test** – The Partner Test system provides a stable test environment for ECHO's client and data partners. New ECHO versions are released into this system approximately 2 weeks prior to the schedule Operational release date to allow for sufficient testing. ECHO Partners are encouraged to verify ingest and order capabilities in this system when a new version has been released.
3. **Testbed** – The Testbed system provides a preview of new ECHO functionality and an environment for testing capabilities which may not become operational. There is often very little metadata available in this mode, but it is fully functional. Use is subject to a Memorandum of Understanding. The next operational ECHO version is released into this system approximately 1 month before its schedule Operational release date.

ECHO Provider Identification

Data Center ID

You will need to identify your data center id/data provider for use in ECHO. The name chosen for this will become the basis of your provider's existence in ECHO. Changing this value after data has been ingested is possible, but strongly discouraged. The data center id chosen will need to be 10 characters or less and unique against all other providers in the operational ECHO. ECHO Operations can assist with suggestions if needed. This data center id will appear in the following locations within the ECHO system:

- ECHO API
- ECHO Metadata Item IDs
- Reverb Calendar
- Reverb Metadata Results
- ECHO Holdings Report
- ECHO Website
- PUMP
- Ingest Reports
- REST resource URLs specific to your provider - collection and granule resources for example
- Legacy Ingest FTP Space

Provider Administrators

ECHO Operations will ask for an initial listing of URS user IDs which will be granted administrator access to your ECHO provider. If individuals you wish to have administrative access do not have an URS registered account, they may create one by visiting either URS or Reverb for the mode in which your provider is being configured.

ECHO Metadata

Metadata Data Model

The following two metadata constructs are utilized by the ECHO system:

- **Collection** - A grouping of science data that all come from the same source, such as a modeling group or institution. Collections have information that is common across all the granules they contain and a template for describing additional attributes not already part of the metadata model.
- **Granule** - The smallest aggregation of data that can be independently managed (described, inventoried, and retrieved). Granules have their own metadata model and support values associated with the additional attributes defined by the owning collection.

For additional information regarding the ECHO data model, refer to the following documentation and the Ingest section of this guide

Spatial Representations

The ECHO system accepts spatial data represented in the Cartesian and Geodetic coordinate systems. ECHO also accepts spatial information representing orbital data. Each coordinate system has associated limitations. You should choose a coordinate system based on the size and projection of the original data of the spatial area covered. You may not combine spatial types for granules within the same collection as the representations are mutually exclusive. For additional information, refer to the ECHO spatial representations of this Guide.

Special Considerations

The following items should be considered as you are generating your metadata for submission to ECHO. Refer to the associated sections in the Ingest section of this guide

- Additional Attributes
- TwoD Coordinate System Representation
- Collection Spatial Representation
- Granule Spatial Representation
- Science Keywords
- GCMD Dif Entry IDs

- Platform/Instrument/Sensor

Data Management

The following sections discuss topics relevant to data management within ECHO. This is an integral function that you will perform to control access to your provider's information and catalog items. For more detailed discussions of these topics, refer to the Data management section of this Guide.

Provider Object Access

As an ECHO Data Provider, you will have the ability to control access to information about your provider (e.g. ordering policies & groups). Permissions for these items are assigned to groups containing lists of ECHO registered users. It is important that a data provider exercise appropriate control over the accessibility of their provider's information. In some cases, a provider will only have one group of individuals to whom permission will be graned. However, other providers may wish to separate responsibilities into separate roles, such as Data Managers and User Services.

Catalog Item Access

As an ECHO Data Provider, you will also have the ability to control access to catalog items (e.g. collections & granules). Permissions for all of these items are assigned to groups containing lists of ECHO registered users. It is important that a data provider exercise appropriate control over the accessibility of their data holdings. In some cases, a provider will not require any restrictions on the visibility or order ability of their data, but there are a variety of reasons why this would not be or stay the case; i.e. hiding old versions of data, data integrity issues, access restricted to certain members of the science community, cost, etc.

Provider Administrators

Your provider will have an Administrator group which will have permissions to create, read, update, and delete all information about your provider. This group will also be view all catalog items. Members of this group are referred to as provider administrators. These individuals will also be able to create additional groups (e.g. data managers & user services) and assign permissions to access provider information. ECHO Operations will coordinate with you regarding an initial set of ECHO registered users who will be added to your Administrator group. Subsequent changes can be made by members of that group.

Groups

As has been discussed, groups are a core component of assigning permissions to access provider information and catalog items. ECHO Operations will work with you to determine the right strategy for group creation according to your data management needs.

Ordering

The following sections discuss topics relevant to the access of data represented in ECHO. For more detailed discussions of these topics, refer to the Fulfilling orders section of this Guide.

Ordering or Not

As an ECHO Data Partner you can choose to accept orders brokered through ECHO. ECHO has a published API which, when made available by a Data Partner, is used to transmit ECHO order information. If you choose to support ordering, you will need to implement the ECHO Order Fulfillment service and then register it with ECHO. Whether or not you choose to support ordering, you may supply online access URLs in your metadata, which ECHO and Reverb will make available to end users facilitating direct downloads.

Order Options

In order to request additional order information (e.g. ftp push location), you can create ECHO Order Forms based on the ECHO Forms Specification. This specification can be used to specify the input mechanisms for gathering information from users, and how that data will be

represented in an XML block sent to your order fulfillment service. Reverb currently supports the visualization of this specification. For more information, refer to http://api.echo.nasa.gov/echo/echoforms/index.html and https://earthdata.nasa.gov/sites/default/files/field/document/ECHO_Forms_Specification_0.pdf